

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0136  
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. SF-78739
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator CONOCOPHILLIPS COMPANY Contact: VICKI WESTBY E-Mail: Vicki.R.Westby@conocophillips.com		7. If Unit or CA Agreement, Name and No.
3a. Address 4001 PENBROOK, SUITE 346 ODESSA, TX 79762	3b. Phone No. (include area code) Ph: 915.368.1352	8. Lease Name and Well No. SAN JUAN 30-5 UNIT 240A
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SESE 842FSL 907FEL At proposed prod. zone		9. API Well No. 30-039-29219
14. Distance in miles and direction from nearest town or post office*		10. Field and Pool, or Exploratory BASIN FRUITLAND COAL
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of Acres in Lease	11. Sec., T., R., M., or Blk. and Survey or Area Sec 22 T30N R05W Mer NMP
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth 3445 MD	12. County or Parish RIO ARRIBA
21. Elevations (Show whether DF, KB, RT, GL, etc. 6660 GL	22. Approximate date work will start	13. State NM
23. Estimated duration		17. Spacing Unit dedicated to this well E/2
20. BLM/BIA Bond No. on file		

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- |   |  |
|---|--|
| 1. Well plat certified by a registered surveyor.  | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2. A Drilling Plan:   | 5. Operator certification  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature (Electronic Submission)	Name (Printed/Typed) VICKI WESTBY	Date 08/27/2004
Title AGENT		
Approved by (Signature) <i>B. Manke</i>	Name (Printed/Typed)	Date 9-30-04
Title AFM	Office FFO	

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Additional Operator Remarks (see next page)

Electronic Submission #35295 verified by the BLM Well Information System  
For CONOCOPHILLIPS COMPANY, sent to the Farmington

DRILLING OPERATIONS AUTHORIZED ARE  
SUBJECT TO COMPLIANCE WITH ATTACHED  
"GENERAL REQUIREMENTS".

This action is subject to technical and  
procedural review pursuant to 43 CFR 3165.3  
and appeal pursuant to 43 CFR 3165.4

\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\*

NMOCD

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

Form C-102  
Revised June 10, 2003  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number <b>30-039-29219</b>		*Pool Code <b>71629</b>	*Pool Name <b>BASIN FRUITLAND COAL (GAS)</b>
*Property Code <b>31327</b>	*Property Name <b>SAN JUAN 30-5 UNIT</b>		*Well Number <b>240A</b>
*OGRID No. <b>217817</b>	*Operator Name <b>CONOCOPHILLIPS COMPANY</b>		*Elevation <b>6660</b>

## 10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the North/South line	Feet from the East/West line	County
P	22	30N	05W	842	SOUTH	907	RIO ARRIBA

## 11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the North/South line	Feet from the East/West line	County

*Dedicated Acres <b>320.0</b>	*Joint or Infill	*Consolidation Code	*Order No.
----------------------------------	------------------	---------------------	------------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16

22

LEASE  
SF-78739

Lat: 36°47.5902' N  
Long: 107°20.3292' W  
Datum: NAD83

907'

842'

N89°45'E 5280.00'

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

*Vicki Westby*  
Signature  
Vicki Westby  
Printed Name  
Sr. Analyst  
Title and E-mail Address  
8/27/04  
Date

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey: 08/28/04  
Signature and Seal of Professional Surveyor  
*Henry P. Roadman, Jr.*  
Professional Surveyor  
Certificate Number: NM 11833

Submit 3 Copies To Appropriate District Office  
District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Ave., Artesia, NM 88210  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources

Form C-103  
May 27, 2004

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO.
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other		5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
2. Name of Operator ConocoPhillips Company		6. State Oil & Gas Lease No.
3. Address of Operator 4001 Penbrook, Odessa, TX 79762		7. Lease Name or Unit Agreement Name <i>San Juan 30-5 unit</i>
4. Well Location Unit Letter <i>P</i> : <i>842</i> feet from the <i>South</i> line and <i>907</i> feet from the <i>East</i> line Section <i>22</i> Township <i>30N</i> Range <i>5W</i> NMPM <i>Rio Arriba</i> County		8. Well Number <i>240A</i>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) <i>6660</i> GL		9. OGRID Number <i>217817</i>
Pit or Below-grade Tank Application <input type="checkbox"/> or Closure <input type="checkbox"/>		10. Pool name or Wildcat <i>Basin Fruitland Coal</i>
Pit type <i>Drill</i> Depth to Groundwater <i>450'</i> Distance from nearest fresh water well <i>&gt;1000'</i> Distance from nearest surface water <i>200-1000'</i>		
Pit Liner Thickness: mil Below-Grade Tank: Volume bbls; Construction Material		

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

<b>NOTICE OF INTENTION TO:</b>		<b>SUBSEQUENT REPORT OF:</b>	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
OTHER: Drill Pit Notification <input checked="" type="checkbox"/>		OTHER: <input type="checkbox"/>	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

ConocoPhillips Company's Generic Pit Plan is on file at NMOCD in Aztec, NM. See the attached diagram that details the location of the pit in reference to the proposed wellhead. The drill pit will be lined. The drill pit will be closed after the well has been completed. The solids left after the water has been disposed of will be sampled and NMOCD approval will be obtained prior to closure of this pit.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE *Vicki Westby (pj)* TITLE *Sr. Analyst* DATE *8/27/04*

Type or print name Vicki Westby E-mail address: Vicki.R.Westby@ConocoPhillips.com Telephone No. 432-368-1352

For State Use Only

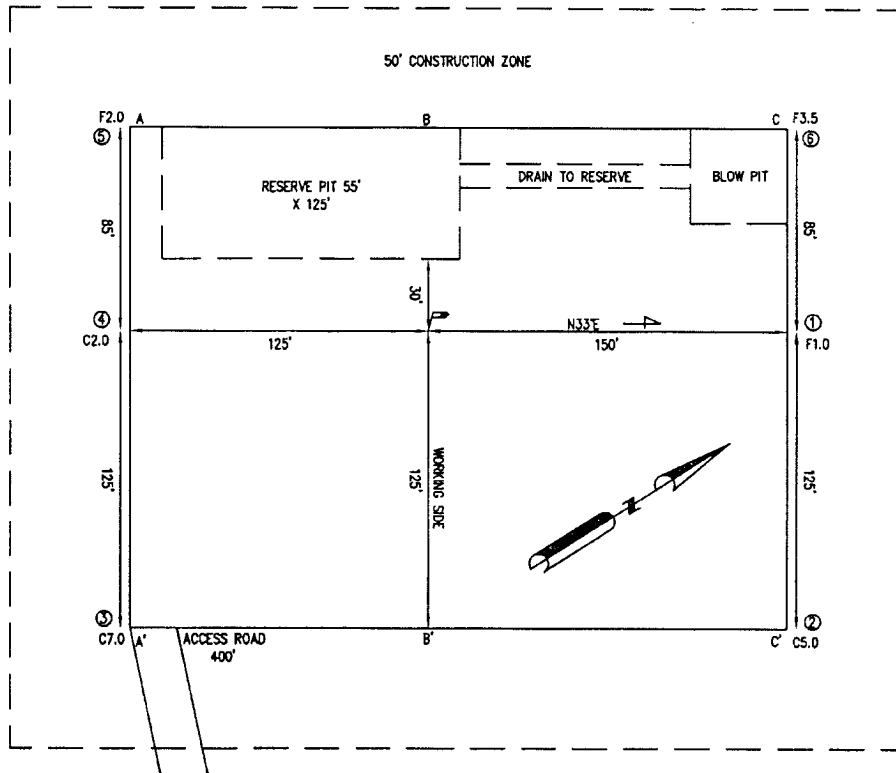
APPROVED BY: *[Signature]* TITLE *DEPUTY OIL & GAS INSPECTOR, DIST. IV* DATE *OCT - 4 2004*

Conditions of Approval (if any):

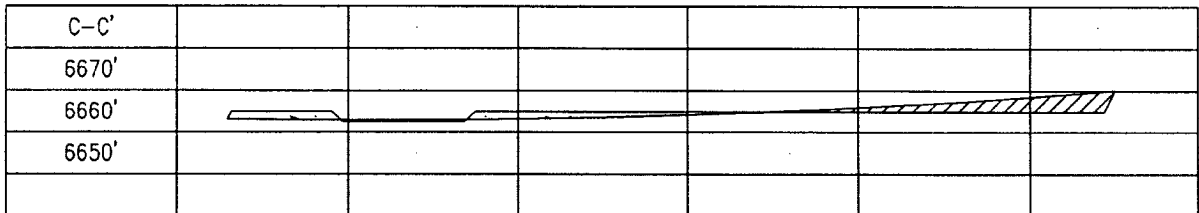
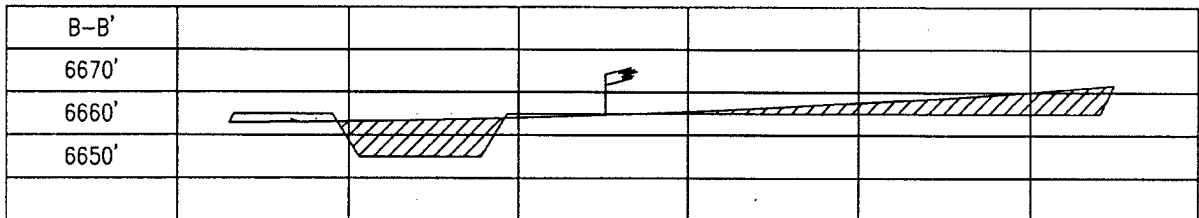
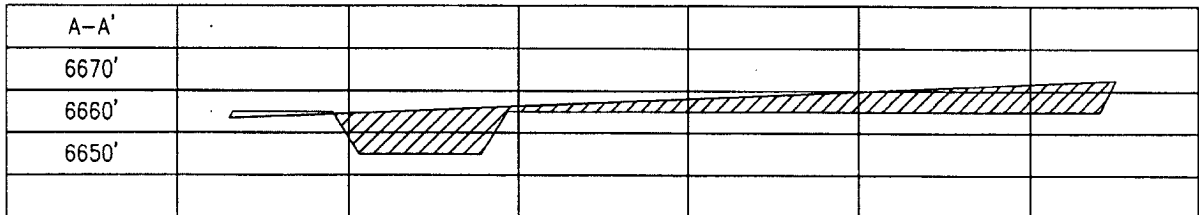
CONOCOPHILLIPS COMPANY SAN JUAN 30-5 UNIT #240A  
 842' FSL & 907' FEL, SECTION 22, T30N, R05W, NMPM  
 RIO ARriba COUNTY, NEW MEXICO ELEVATION: 6660'

36.473539  
 107.201759  
 (NAD 87)

LATITUDE: 36.79317° N  
 LONGITUDE: 107.33882° W  
 DATUM: WGS84



PLAT NOTE:  
 \*SURFACE OWNER\*  
 FEE: ARMANDO ESPINOSA



# PROJECT PROPOSAL - New Drill / Sidetrack

San Juan Business Unit

SAN JUAN 30-5 240A

Lease:		AFE #:		AFE \$:	
Field Name: hPHILLIPS 30-5	Rig:	State: NM	County: RIO ARRIBA	API #:	
Geoscientist: Murphy, Jim O.	Phone: 832-486-2361	Prod. Engineer: Bergman, Pat W.		Phone: (832) 486-2358	
Res. Engineer: Kolesar, James E.	Phone: (832) 486 - 2336	Proj. Field Lead:		Phone:	

## Primary Objective (Zones):

Zone	Zone Name
JCV	BASIN FRUITLAND COAL (GAS)

<b>Location: Surface</b>					<b>Straight Hole</b>	
Latitude: 36.79	Longitude: -107.34	X:	Y:	Section: 22	Range: 5W	
Footage X: 907 FEL	Footage Y: 842 FSL	Elevation: 6660	(FT)	Township: 30N		
Tolerance:						

Location Type:	Start Date (Est.):	Completion Date:	Date In Operation:
Formation Data: Assume KB = 6673 Units = FT			

Formation Call & Casing Points	Depth (TVD in Ft)	SS (Ft)	Depletion (Yes/No)	BHP (PSIG)	BHT	Remarks
SAN JOSE	13	6660	<input type="checkbox"/>			
Surface Casing	213	6460	<input type="checkbox"/>			12-1/4 hole. 9 5/8" 32.3 ppf, H-40, STC casing. Circulate cement to surface.
NCMT	1576	5097	<input type="checkbox"/>			
OJAM	2784	3889	<input type="checkbox"/>			Possible water flows.
KRLD	2896	3777	<input type="checkbox"/>			
FRLD	3175	3498	<input type="checkbox"/>			Possible gas.
Intermediate Casing	3253	3420	<input type="checkbox"/>			8 3/4" Hole. 7", 20 ppf, J-55, STC Casing. Circulate cement to surface.
BASE MAIN COAL	3363	3310	<input type="checkbox"/>			
PC TONGUE	3413	3260	<input type="checkbox"/>			
Total Depth	3445	3228	<input type="checkbox"/>			
BASE LOWEST COAL	3553	3120	<input type="checkbox"/>			
PCCF	3556	3117	<input type="checkbox"/>			

## Reference Wells:

Reference Type	Well Name	Comments
----------------	-----------	----------

## Logging Program:

Intermediate Logs:	<input type="checkbox"/> Log only if show	<input type="checkbox"/> GR/ILD	<input type="checkbox"/> Triple Combo
TD Logs:	<input type="checkbox"/> Triple Combo	<input type="checkbox"/> Dipmeter	<input type="checkbox"/> RFT <input type="checkbox"/> Sonic <input type="checkbox"/> VSP <input type="checkbox"/> TDT
Additional Information:			

Comments: General/Work Description - Secondary geologist Tom Cloud 832-486-2377

Mud Log from intermediate casing shoe to TD will be obtained.

### Drilling Mud Program:

Surface: spud mud

Intermediate: fresh water mud with bentonite and polymer as needed

Below Intermediate: air/mist drilling media with foamer, polymer, & corrosion inhibitor as needed

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.**

FORM APPROVED  
OMB NO. 1004-0135  
Expires: November 30, 2000

**SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other		7. If Unit or CA/Agreement, Name and/or No. NMNM78419D
2. Name of Operator CONOCOPHILLIPS COMPANY		8. Well Name and No. SAN JUAN 30-5 240A
3a. Address PO BOX 2197 WL3 6054 HOUSTON, TX 77252		9. API Well No. 30-039-29219-00-X1
3b. Phone No. (include area code) Ph: 915.368.1352		10. Field and Pool, or Exploratory BASIN FRUITLAND COAL
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 22 T30N R5W SESE 842FSL 907FEL		11. County or Parish, and State RIO ARRIBA COUNTY, NM

**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original A
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

ConocoPhillips requests to submit a corrected well proposal showing liner information. A revised well proposal is attached to this sundry.

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #35643 verified by the BLM Well Information System  
For CONOCOPHILLIPS COMPANY, sent to the Farmington  
Committed to AFMSS for processing by ADRIENNE BRUMLEY on 09/09/2004 (04AXB3338SE)**

Name (Printed/Typed) VICKI WESTBY

Title AGENT

Signature (Electronic Submission)

Date 09/03/2004

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\***

**NMOC**

# PROJECT PROPOSAL - New Drill / Sidetrack

**SAN JUAN 30-5 240A**

Lease:		AFE #:		AFE \$:	
Field Name: hPHILLIPS 30-5		Rig:		State: NM	County: RIO ARRIBA
Geoscientist: Murphy, Jim O.		Phone: 832-486-2361	Prod. Engineer: Bergman, Pat W.		Phone: (832) 486-2358
Res. Engineer: Kolesar, James E.		Phone: (832) 486 - 2336	Proj. Field Lead:		Phone:

## Primary Objective (Zones):

Zone	Zone Name
JCV	BASIN FRUITLAND COAL (GAS)

## Location: Surface Straight Hole

Latitude: 36.79	Longitude: -107.34	X:	Y:	Section: 22	Range: 5W
Footage X: 907 FEL	Footage Y: 842 FSL	Elevation: 6660 (FT)	Township: 30N		

## Tolerance:

Location Type:	Start Date (Est.):	Completion Date:	Date In Operation:
----------------	--------------------	------------------	--------------------

Formation Data: Assume KB = 6673 Units = FT

Formation Call & Casing Points	Depth (TVD in Ft)	SS (Ft)	Depletion (Yes/No)	BHP (PSIG)	BHT	Remarks
SAN JOSE	13	6660	<input type="checkbox"/>			
Surface Casing	213	6460	<input type="checkbox"/>			12-1/4 hole. 9 5/8" 32.3 ppf, H-40, STC casing. Circulate cement to surface.
NCMT	1576	5097	<input type="checkbox"/>			
OJAM	2784	3889	<input type="checkbox"/>			Possible water flows.
KRLD	2896	3777	<input type="checkbox"/>			
FRLD	3175	3498	<input type="checkbox"/>			Possible gas.
Intermediate Casing	3253	3420	<input type="checkbox"/>			8 3/4" Hole. 7", 20 ppf, J-55, STC Casing. Circulate cement to surface.
BASE MAIN COAL	3363	3310	<input type="checkbox"/>			
PC TONGUE	3413	3260	<input type="checkbox"/>			
Total Depth	3445	3228	<input type="checkbox"/>			6-1/4" hole possibly underreamed to 9.5". Optional liner: 5.5", 15.5#, J-55 LTC - left uncemented
BASE LOWEST COAL	3553	3120	<input type="checkbox"/>			
PCCF	3556	3117	<input type="checkbox"/>			

## Reference Wells:

Reference Type	Well Name	Comments
----------------	-----------	----------

## Logging Program:

Intermediate Logs: ☐ Log only if show ☐ GR/ILD ☐ Triple Combo

TD Logs: ☐ Triple Combo ☐ Dipmeter ☐ RFT ☐ Sonic ☐ VSP ☐ TDT

Additional Information:

Comments: General/Work Description - Secondary geologist Tom Cloud 832-486-2377

Mud Log from intermediate casing shoe to TD will be obtained.

Drilling Mud Program:

Surface: spud mud

Intermediate: fresh water mud with bentonite and polymer as needed

Below Intermediate: air/mist drilling media with foamer, polymer, & corrosion inhibitor as needed

San Juan 30-5 # 240A

SURFACE CASING :

Drill Bit Diameter	12.25 "	
Casing Outside Diameter	9.625 "	Casing Inside Diam. 9.001 "
Casing Weight	32.3	ppf
Casing Grade	H-40	
Shoe Depth	230 '	
Cement Yield	1.21	cuft/sk
Excess Cement	125	%
Cement Required	147	sx

SHOE 230 ', 9.625 ", 32.3 ppf, H-40 STC

INTERMEDIATE CASING :

Drill Bit Diameter	8.75 "	
Casing Outside Diameter	7 "	Casing Inside Diam. 6.456 "
Casing Weight	20	ppf
Casing Grade	J-55	
Shoe Depth	3253 '	
Lead Cement Yield	2.91	cuft/sk
Lead Cement Excess	160	%
Tail Cement Length	315 '	
Tail Cement Yield	1.33	cuft/sk
Tail Cement Excess	160	%
Lead Cement Required	377	sx
Tail Cement Required	100	sx

LINER TOP 3233 '

SHOE 3253 ', 7 ", 20 ppf, J-55

LINER BOTTOM 3445 ' (Uncemented)



San Juan 30-5 # 240A		
	Surf. Csg	Int. Csg
OD	9.625	7
ID	9.001	6.456
Depth	230	3253
Hole Diam	12.25	8.75
% Excess Lead		160
% Excess Tail	125	160
Lead Yield		2.91
Tail Yield	1.21	1.33
Ft of Tail Slurry	230	315
Top of Tail Slurry	0	2938
Top of Lead Slurry	N/A	0
Mud Wt (ppg)	8.9	9.0
Mud Type	WBM	WBM

Surface Casing						
	Ft	Cap	XS Factor	bbls	cuft	sx
Open Hole Annulus	230	0.055804	2.25	28.9	162.1	134.0
Shoe Track Volume	40	0.078735	1	3.1	17.7	13.3
Total				32.0	179.8	147.3

Intermediate Casing						
	Ft	Cap	XS Factor	bbls	cuft	sx
Lead Open Hole Annulus	2708	0.026786	2.6	188.6	1058.9	363.9
Lead Cased Hole Annulus	220	0.031116	1	6.8	38.4	13.2
Lead Total				195.4	1097.3	377.1
Tail Open Hole Annulus	315	0.026786	2.6	21.9	123.2	92.6
Tail Shoe Track Volume	42	0.040505	1	1.7	9.6	7.2
Tail Total				23.6	132.7	99.8

San Juan 30-5 # 240A	
9-5/8 Surface Casing	
Cement Recipe	Class C Standard Cement
	+ 3% Calcium Chloride
	+0.25 lb/sx Flocele
Cement Volume	147 sx
Cement Yield	1.21 cuft/sx
Slurry Volume	179.8 cuft
	32.0 bbls
Cement Density	15.6 ppg
Water Required	5.29 gal/sx

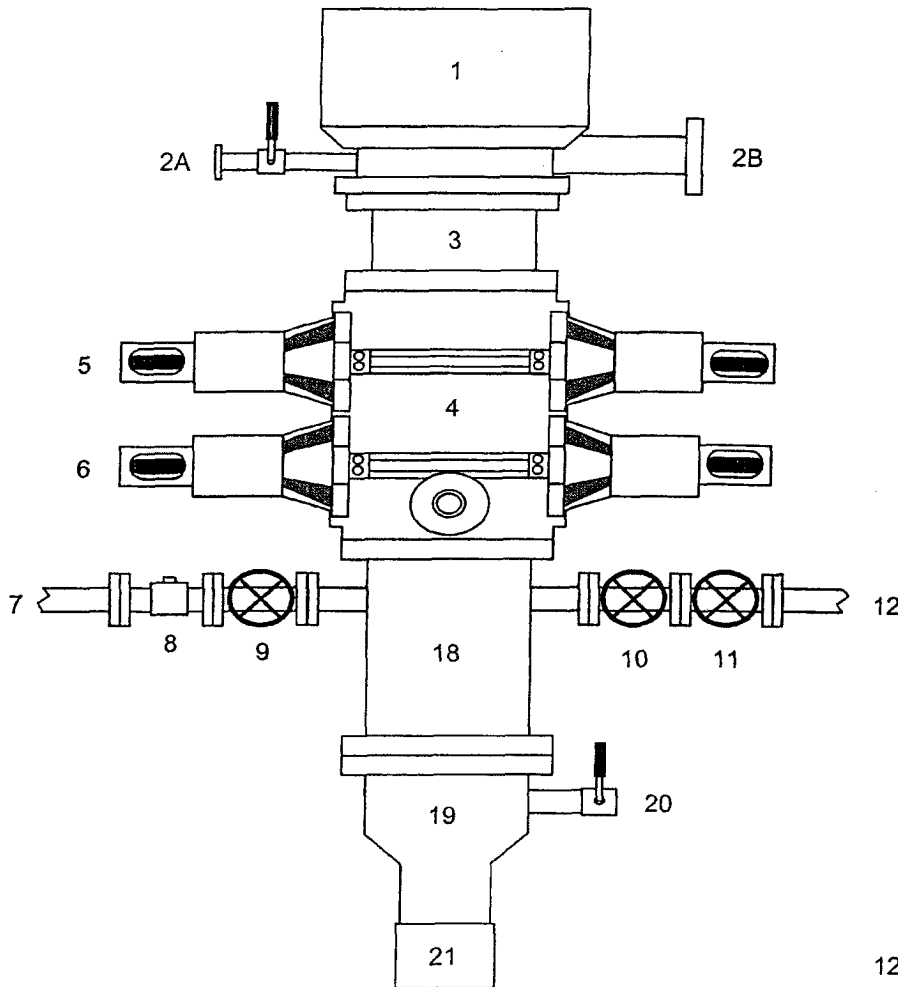
San Juan 30-5 # 240A
----------------------

7" Intermediate Casing	
Lead Slurry	
Cement Recipe	Standard Cement
	+ 3% Econolite (Lost Circulation Additive)
	+ 10 lb/sx Gilsonite (Lost Circ. Additive)
	+ 0.25 lb/sx Flocele (Lost Circ. Additive)
Cement Required	377 sx
Cement Yield	2.91 cuft/sx
Slurry Volume	1097.3 cuft
	195.4 bbls
Cement Density	11.5 ppg
Water Required	16.88 gal/sx

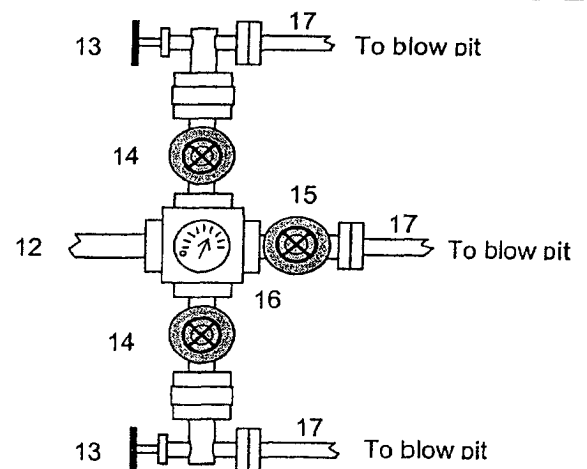
7" Intermediate Casing	
Tail Slurry	
Cement Slurry	50 / 50 POZ:Standard Cement
	+ 2% Bentonite (Light Weight Additive)
	+ 5 lbm/sk Gilsonite (Lost Circ. Additive)
	+ 0.25 lbm/sk Flocele (lost Circ. Additive)
	+ 2% Calcium Chloride (Accelerator)
Cement Required	100 sx
Cement Yield	1.33 cuft/sx
Slurry Volume	132.7 cuft
	23.6 bbls
Cement Density	13.5 ppg
Water Required	5.36 gal/sx

# BLOWOUT PREVENTER ARRANGEMENT & PROGRAM

For Drilling to Intermediate Casing Point & Setting 7" Intermediate Casing



1. Rotating Head
- 2A. Fill-up Line & valve
- 2B. Flowline
3. Spacer Spool
4. Double Ram BOP (11", 3000 psi)
5. Pipe Rams
6. Blind Rams
7. Kill Line
8. Kill Line Check Valve
9. Kill Line Valve
10. Inner Choke Line Valve (3")
11. Outer Choke Line Valve (3")
12. Choke Line (3")
13. Variable Choke
14. Choke Line Valve (2")
15. Panic Line Valve (3")
16. Choke Manifold Pressure Gauge
17. Choke Line (2")
18. Mud Cross Spacer Spool
19. Casing Head "A" Section
20. Casing Head "A" Section 2" Valve
21. 9 5/8" Casing Collar



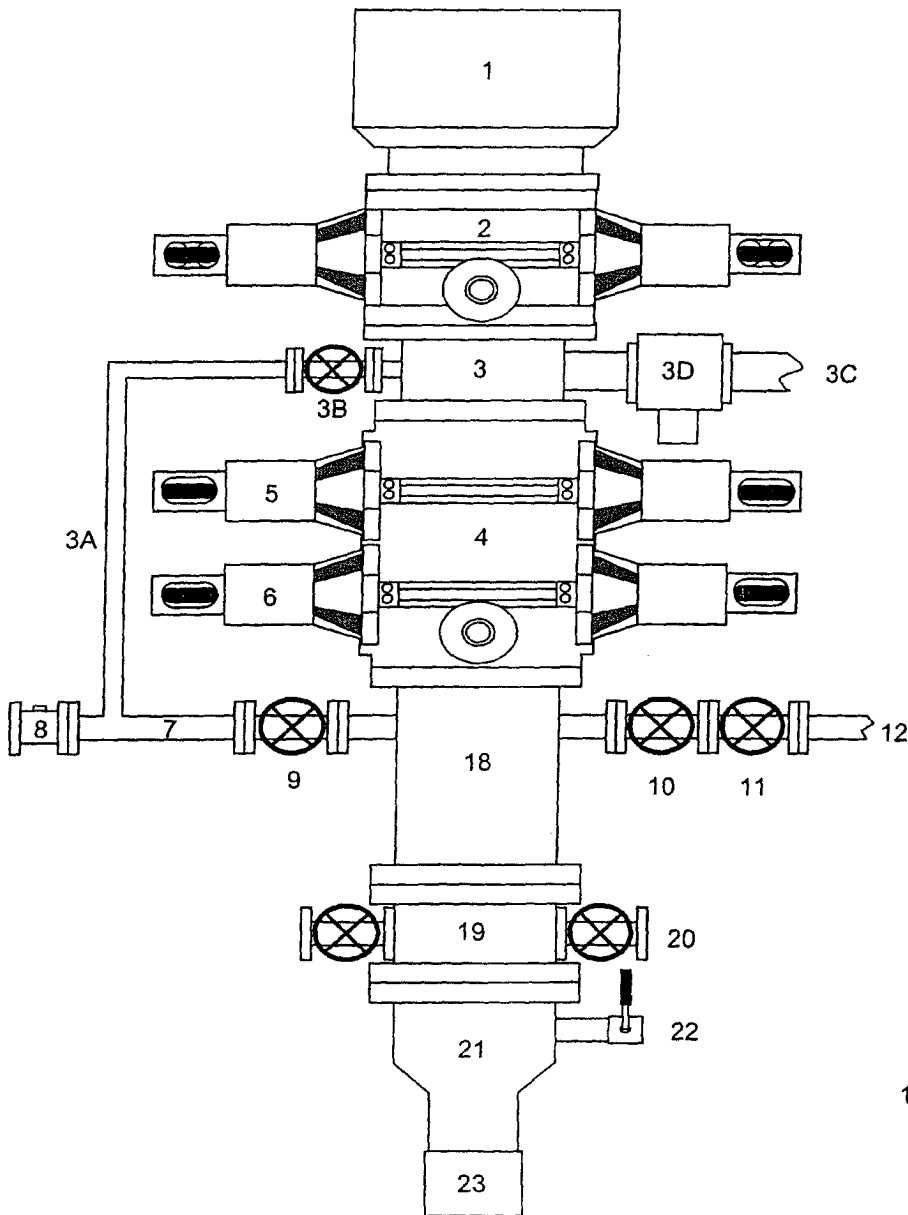
A 12-1/4" hole will be drilled to approximately 220' and the 9-5/8" surface casing will be run and cemented. The Casing Head "A" Section will be screwed onto the 9-5/8" surface casing stub. The BOP will be installed on the Casing Head "A" Section. A test plug will be set in the wellhead and the pipe rams and choke manifold will be tested to 200 psi to 300 psi (low pressure test) for 2-3 minutes and to 1000 psi (high pressure test) for 10 minutes. Then the test plug will be removed, and the 9-5/8" casing will be pressure tested against closed blind rams to 200 psi to 300 psi for 2-3 minutes and to 1000 psi for 30 minutes (this value is one 44% of the minimum internal yield pressure of the 9-5/8" casing). (Note: per regulatory requirements we will wait on cement at least 8 hrs after placement before testing the 9-5/8" surface casing). Then an 8-3/4" hole will be drilled to intermediate casing point and 7" intermediate casing will be run and cemented.

In addition to the equipment in the above diagram the following equipment will comprise the BOP system:

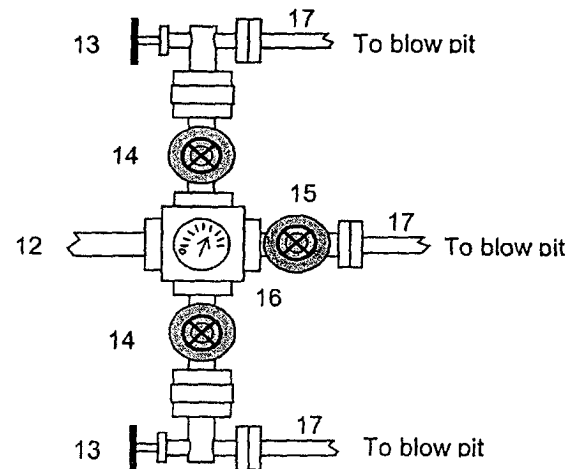
1. Upper Kelly cock Valve with handle
2. Stab-in TIW valve for all drillstrings in use

# BLOWOUT PREVENTER ARRANGEMENT & PROGRAM

## For Cavitation Program



1. Rotating Head
2. Single Ram BOP (7-1/16", 3M)
3. Mud Cross
- 3A. Equalizing Line (2")
- 3B. Wing Valve (2-1/16", 3M)
- 3C. Bloopie Line (2 ea, 5" OD)
- 3D. HCR Valve (1 ea per line, 4-1/16")
4. Double Ram BOP (7-1/16", 3M)
5. Pipe Rams
6. Blind Rams
7. Kill Line
8. Kill Line Check Valve
9. Kill Line Valve
10. Inner Choke Line Valve (3")
11. Outer Choke Line Valve (3")
12. Choke Line (3")
13. Variable Choke
14. Choke Line Valve (2")
15. Panic Line Valve (3")
16. Choke Manifold Pressure Gauge
17. Vent Line (2")
18. Spacer Spool
19. Tubing Head
20. Tubing Head Valves (2- 9/16")
21. Casing Head "A" Section
22. Casing Head "A" Section 2" Valve
23. 9-5/8" Casing Collar



This BOP arrangement and test program is for the cavitation program. The BOP will be installed on the tubing head. The 7" casing will be pressure tested against closed blind rams to 200 psi to 300 psi for 2-3 minutes and to 1800 psi for 30 minutes - this test pressure is 48% of the minimum internal yield strength of 3740 psi for the 7", 20#, J-55, STC casing. The pipe rams and choke manifold will be tested to 200 psi to 300 psi (low pressure test) for 2-3 minutes and to 1800 psi (high pressure test) for 10 minutes - This test will be done with a test plug or possibly without a test plug (ie against casing). If we conduct this test without a test plug we will ensure that we have sufficient drillstring weight in the hole to exceed the upward force generated by the test.

We use a power swivel and air/mist to drill the 6-1/4" hole in our cavitation program. We do not use a kelly. In addition to the equipment in the above diagram the following equipment will comprise the BOP system:

1. String floats will be used inside the drillpipe
2. Stab-in TIW valve for all drillstrings in use
3. Each bloopie line is equipped with a hydraulically controlled valve (HCR valve)